

Serial No. 10/751,010
Docket No. SHE0059.00

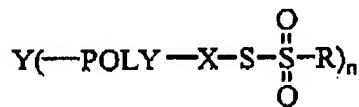
AMENDMENTS

In the Claims:

Please amend claims 1 and 11 as indicated below. Please cancel claims 5, 10 and 15-20 without prejudice. Currently amended claims are presented with markings to indicate the changes made, wherein a ~~strikethrough~~ is used to designate deletions and underlining is used to designate additions.

1. (Currently amended) A method for making a crosslinked polymer composition capable of forming a hydrogel comprising:

providing a first composition comprising at least one thiosulfonate polymer derivative, wherein said at least one thiosulfonate polymer derivative comprises ~~at least three thiosulfonate functional groups;~~ has the formula,



wherein POLY is a water-soluble polymer, (n) is 3 to about 25, X is a linking group, Y is a moiety derived from a molecule having at least three nucleophilic groups, and J is hydrogen, or an organic radical;

exposing said first composition to a base under conditions sufficient to initiate crosslinking between said thiosulfonate functional groups; and

allowing said crosslinking to proceed to thereby form said crosslinked polymer composition capable of forming a hydrogel.

2. (Original) The method of claim 1, wherein said first composition is substantially free of a crosslinking agent or redox catalyst.

3. (Previously presented) The method of claim 1, wherein said at least one thiosulfonate polymer derivative is a 3 to about 100 arm thiosulfonate ester of a water-soluble polymer.

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4. (Original) The method of claim 1, wherein said first composition comprises a single thiosulfonate polymer derivative component capable of crosslinking upon exposure to a base.

5. (Canceled).

6. (Original) The method of claim 1, wherein POLY is a poly(ethylene glycol); (n) is 4; X is selected from the group consisting of alkylene groups, alkylene amides, alkylene esters, and alkylene ethers; and Y is derived from a moiety selected from the group consisting of glycerol, oligoglycerols, pentaerythritol, carbohydrates, cyclodextrin, and amino acid analogues thereof.

7. (Original) The method of claim 1, wherein said first composition further comprises at least one active agent.

8. (Previously amended) The method of claim 7, further comprising incorporating at least one biologically active moiety in the hydrogel.

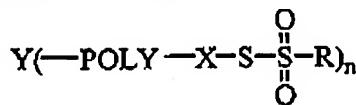
9. (Previously amended) The method of claim 7, wherein said at least one biologically active moiety is entrapped within the crosslinked polymer composition during said crosslinking or is covalently linked to said at least one thiosulfonate polymer derivative.

10. (Canceled).

11. (Currently amended) A method for forming a crosslinked polymer composition capable of forming a hydrogel having desired physical properties from a single component hydrogel-forming composition, said method comprising:

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providing a single component hydrogel-forming composition comprising a thiosulfonate polymer derivative, wherein said thiosulfonate polymer derivative ~~comprises at least three thiosulfonate functional groups; has the formula,~~



wherein POLY is a water-soluble polymer, (n) is 3 to about 25, X is a linking group, Y is a moiety derived from a molecule having at least three nucleophilic groups, and R is hydrogen, or an organic radical;

exposing said single component hydrogel forming composition to a base under conditions sufficient to initiate crosslinking between said thiosulfonate functional groups; and

allowing said crosslinking to proceed and thereby form said crosslinked polymer composition capable of forming a hydrogel.

12. (Original) The method of claim 11, wherein said base has a pH ranging from about 7.4 to about 9.0.

13. (Original) The method of claim 11, wherein said single component hydrogel-forming composition is exposed to said base at a temperature ranging from about 20 °C to about 50 °C.

14. (Original) The method of claim 11, wherein said thiosulfonate polymer derivative is present in said single component hydrogel-forming composition at a concentration ranging from about 2% w/v to about 25% w/v.

15. (Cancelled).

16. (Cancelled).

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17. (Canceled).

18. (Canceled).

19. (Canceled).

20. (Canceled).

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